
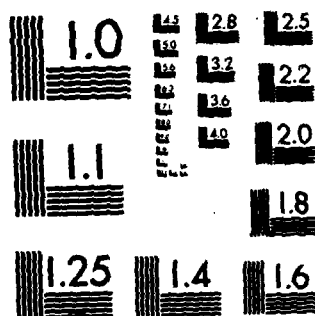


42-4186 524 VIBRATIONAL KINETICS AND ENERGY TRANSFER INDUCED BY 1 1
SHOCK WAVES IN ORGANIC (U) CITY COLL NEW YORK INST FOR
ULTRAFAST SPECTROSCOPY AND LASERS... R R ALFANO
UNCLASSIFIED 30 SEP 87 N00014-82-K-6305 F G 9/3 NL





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TITLE OF CONTRACT: Vibrational Kinetics and Energy Transfer
Induced by Shock Waves in Organic Crystals
and Polymers Studied by Picosecond Laser.

NAME(S) OF PRINCIPAL INVESTIGATOR(S):

Prof. R. R. Alfano

NAME OF ORGANIZATION:

Institute for Ultrafast Spectroscopy and
Lasers, The City College of New York

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PAPERS PUBLISHED IN REFERRED JOURNALS

1. Effect of Picosecond-Laser-Driven Shock Waves on Spontaneous and Stimulated Emission in GaSe, X. Z. Lu, R. Rao, B. Willman, S. Lee, A. G. Doukas, and R. R. Alfano, Phys. Rev. B 35, 7515 (1987).

2. Photoluminescence due to Exciton-Exciton Scattering in GaSe under Picosecond Laser Excitation, X. Z. Lu, R. Rao, B. Willman, S. Lee, A. G. Doukas, and R. R. Alfano, Phys. Rev. B 36, 1140 (1987).

PAPERS SUBMITTED TO REFERRED JOURNALS

(Not yet published)

1. Shock-Wave-Induced Collision Broadening of the Photoluminescence Spectra in GaSe, X. Z. Lu, S. Lee, R. Garuthara and R. R. Alfano, submitted to Applied Physics Letters, Aug. 13, 1987.

2. Gallium Arsenide Photoluminescence Under the Picosecond-Laser-Driven Shock Compression, X. Z. Lu, R. Garuthara, S. Lee and R. R. Alfano, submitted to Applied Physics Letters, Sept. 8, 1987.

BOOKS (AND SECTIONS THEREOF) PUBLISHED

1. Light Emission from GaSe Semiconductor under Picosecond-Laser-Induced Shock Pressure, R. Rao, X. Z. Lu, B. Willman, S. Lee, A. G. Doukas, and R. R. Alfano, Proceedings of the International Conference on LASER' 86.

INVITED PRESENTATIONS AT TOPICAL OR
SCIENTIFIC/TECHNICAL SOCIETY CONFERENCES

1. Effect of Intense Picosecond Laser Induced Shock Pressure on the Spontaneous and Stimulated Emission from Layered GaSe Semiconductor, R. Rao, X. Z. Lu, A.G. Doukas, B. Willman, S. Lee, and R. R. Alfano, LASERS' 86 by the Society of Optical and Quantum Electronics, in Orlando, USA, invited paper MG5, (Nov. 3, 1986).

CONTRIBUTED PRESENTATIONS AT TOPICAL OR
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1. The Effect of Picosecond Laser Induced Shock Pressure on the Spontaneous and Stimulated Emission from Layered GaSe, X. Z. Lu, R. Rao, B. Willman, S. Lee, A. G. Doukas, and R. R. Alfano, Energetic Material Initiation Fundamentals Workshop by Office of the Chief of Naval Research, in Los Alamos National Laboratory, USA, (Oct. 17, 1986).

2. Photoluminescence Dynamics of the Layered GaSe Semiconductor under intense Picosecond Laser Generated Shock Waves, X. Z. Lu, R. Rao, A. G. Doukas, B. Willman, S. Lee, and R. R. Alfano, Optical Society of America 1986 Annual Meeting in Seattle, USA, THF4, (Oct. 23, 1986).

3. Shock-Wave-Induced Collision Broadening of the Photoluminescence Spectra in GaSe, X. Z. Lu, S. Lee, R. Garuthara, and R. R. Alfano, American Physical Society 1987 March Meeting in New York, USA, BP7 (March 16, 1987).

4. Photoluminescence Spectra from GaAs under the Picosecond-Laser-Driven Shock Compression, X. Z. Lu, R. Garuthara, S. Lee and R. R. Alfano, Third International Conference on Superlattices, Microstructures and Microdevices in Chicago, USA, Aug. 17 - 20, 1987.

**GRADUATE STUDENTS SUPPORTED UNDER
CONTRACT FOR YEAR ENDING 30 SEPTEMBER 1987**

1. S. Lee

**POSTDOCTORALS SUPPORTED UNDER
CONTRACT FOR YEAR ENDING 30 SEPTEMBER 1987**

1. X. Z. Lu

2. R. Garuthara

